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Title : Manatee-habitat interactions and carrying capacity near selected warm water sites

Category : Ecology

Student : Not Applicable

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Abstract : West Indian manatee (*Trichechus manatus*) distribution in Florida during cold winter months is highly restricted due to their thermal limitations. During this period, seagrass abundance and distribution in proximity to warm water refugia will likely influence manatee feeding behavior. Wildlife Trust has initiated a study to examine manatee-habitat interactions and seagrass carrying capacity along the Riviera Beach Florida Power and Light (FPL) plant area in the winter of 2002-2003. The goal of this study is to increase our understanding how sources of artificial warm water affect manatee populations and what may occur if these refugia disappear. Aerial surveys were conducted (January to March 2003) to document the abundance and distribution of manatees within the study site, and locate specific feeding areas by noting manatees that were producing visible sediment plume. A total of 1,344 manatee sightings were documented from seven surveys. Fifteen percent (203 manatees) of the manatees seen were feeding and 80% (1,075 manatees) were observed in the vicinity (within 1 nm) of the Riviera Beach FPL plant. Grazing impact from a group of six manatees (4 adults and 2 calves) within the vicinity of Munyon Island area was examined three days after being sighted by our aircraft. The areas of three distinct feeding plots within the same seagrass meadow of *Syringodium filiforme* were measured (96.52 m², 45.43 m², and 44.40 m²). By determining the seagrass biomass on the adjacent bed, we estimated the mean total biomass removed by each individual manatee, assuming that the grazing impact of adult and calves was similar, was about 2629.15 gdw (~ 30.40% leaves = 799.72 gdw, ~69.60% root/rhizome = 1829.43). We will tag some individuals in the coming winter season in order to locate and closely monitor the feeding sites utilized by manatees in the vicinity of the Riviera Beach FPL plant.